

## CLAIMS

Please cancel claims 19-26 without prejudice or disclaimer, and please amend the claims and add new claims as shown in the following claim listing.

1. (Currently amended) A system comprising:

a bus having a plurality of lines;

a first device having a first transmitter connected to the bus and configured to transmit a first signal signals in a first frequency band over one line of the bus in a first frequency band and having a receiver to receive second signals in a second frequency band over the one line of the bus while first signals are transmitted over the one line of the bus; and

a second device to communicate with the first device over the bus, the second device having a second transmitter connected to the bus and configured to transmit a second signal signals in the second frequency band over the one line of the bus in a second frequency band at the same time that the first transmitter is transmitting the first signal;

a first receiver connected to the bus and configured to receive the first signal transmitted over the bus in the first frequency band; and

a second receiver connected to the bus and configured to receive the second signal transmitted over the bus in the second frequency band;

wherein the first frequency band and the second frequency band occupy different portions of ~~the~~a frequency spectrum.

2. (Currently amended) The system of claim 1 wherein the first transmitter includes a ~~first~~ filter having a ~~first~~ cutoff frequency defining to define at least in part the first frequency band.

3. (Currently amended) The system of claim 1 wherein the first transmitter includes a ~~first~~an encoder defining to define at least in part the first frequency band.

4. (Currently amended) The system of claim 3 wherein the ~~first~~ encoder has a defined ~~first~~ run length ~~defining at least in part the first frequency band~~.
5. (Currently amended) The system of claim 3 wherein the ~~first~~ encoder comprises a combinational logic table.
6. (Currently amended) The system of claim 1 wherein the first transmitter and the ~~second~~ receiver are part of a single chip.
7. (Original) The system of claim 1 wherein the first frequency band and the second frequency band are fixed.
8. (Currently amended) The system of claim 1 ~~further~~ comprising a band setting unit ~~configured~~ to set the first frequency band and the second frequency band in response to an input signal.
9. (Currently amended) The system of claim 8 ~~further~~ comprising a user selection device ~~configured~~ to generate the input signal.
10. (Currently amended) The system of claim 8 ~~further~~ comprising a first arbitration module and a second arbitration module ~~configured~~ to arbitrate between one another to generate the input signal.
11. (Currently amended) The system of claim 1 wherein the first transmitter and the ~~second~~ receiver are associated with a microprocessor.
12. (Currently amended) The system of claim 1 wherein the first transmitter and the ~~second~~ receiver are associated with a memory storage device.

13. (Currently amended) The system of claim 1 wherein the first transmitter and the ~~second~~ receiver are associated with a chipset.
14. (Currently amended) The system of claim 1 wherein:  
the first transmitter includes a first output connected to the one line of the bus;  
the second transmitter includes a second output connected to the one line of the bus; and  
the ~~first~~ receiver includes a ~~first~~ an input connected to the one line of the bus; and  
~~the second receiver includes a second input connected to the bus.~~
15. (Currently amended) A ~~microprocessor device~~ comprising:  
a transmitter ~~configured to transmit a first signal~~ signals in a first frequency band over one  
of a plurality of lines of a bus over which the device is to communicate with another device in a  
first frequency band; and  
a receiver ~~configured to receive a second signal~~ signals in a second frequency band  
simultaneously transmitted over the one line of the bus in a second frequency band while first  
signals are transmitted over the one line of the bus,  
wherein the first frequency band and the second frequency band occupy different portions  
of ~~the~~ a frequency spectrum; and  
a functional portion to transmit signals using the transmitter and to receive signals using  
the receiver.
16. (Currently amended) The ~~microprocessor device~~ of claim 15 wherein the transmitter includes a ~~first~~ filter having a ~~first~~ cutoff frequency ~~defining~~ to define at least in part the first frequency band.
17. (Currently amended) The ~~microprocessor device~~ of claim 15 wherein the transmitter includes a ~~first~~ an encoder ~~defining~~ to define at least in part the first frequency band.

18. (Currently amended) The ~~microprocessor device~~ device of claim 15 wherein the first frequency band and the second frequency band are fixed.
19. (Canceled).
20. (Canceled).
21. (Canceled).
22. (Canceled).
23. (Canceled).
24. (Canceled).
25. (Canceled).
26. (Canceled).
27. (Currently amended) A method ~~of transmitting data within a device~~, comprising:  
transmitting by a first device a first signal ~~signals over a bus~~ in a first frequency band over one of a plurality of lines of a bus over which the first device is to communicate with a second device; and  
~~transmitting a second signal over the bus in a second frequency band;~~  
~~receiving the first signal transmitted over the bus; and~~

receiving ~~by the first device the second signal~~ signals in a second frequency band  
~~transmitted over the one line of the bus while first signals are transmitted over the one line of the~~  
bus,

wherein: the first frequency band and the second frequency band occupy different  
portions of ~~the~~ a frequency spectrum; ~~and~~

~~transmitting the first signal, transmitting the second signal, receiving the first signal, and~~  
~~receiving the second signal all occur simultaneously.~~

28. (Currently amended) The method of claim 27 wherein transmitting ~~the first signal~~ signals  
includes encoding an output to form ~~the~~ a first signal in the first frequency band.

29. (Currently amended) The method of claim 28 wherein transmitting ~~the first signal~~ signals  
includes encoding an output to form ~~the~~ a first signal with a defined ~~first~~ run length.

30. (Currently amended) The method of claim 27 ~~further comprising setting a spectral band~~  
~~of the first frequency band and the second frequency band based upon a set signal.~~

31. (Currently amended) The method of claim 30 ~~further comprising wherein the setting~~  
~~comprises generating the set signal by arbitrating between two components on the bus~~ the first  
and second devices.

32. (Currently amended) The method of claim 30 ~~further comprising generating the set~~  
~~signal by receiving a selection signal from~~ wherein the setting comprises setting the first  
frequency band by a user.

33. (Currently amended) The method of claim 27 wherein the second device comprises  
memory and wherein the method comprises:

transmitting ~~the~~ a first signal ~~includes requesting memory~~ to request data from a the memory; and

~~transmitting the second signal includes returning memory~~ receiving a second signal to receive requested data from a the memory.

34. (New) The system of claim 1 wherein the second device has a receiver to receive first signals over the one line of the bus while second signals are transmitted over the one line of the bus.

35. (New) The device of claim 15, wherein the functional portion is a processor.

36. (New) The device of claim 15, wherein the functional portion is memory.

37. (New) The device of claim 15, wherein the functional portion is a controller for a chipset.

38. (New) The device of claim 15, wherein the transmitter, receiver, and functional portion are part of a single chip.

39. (New) The device of claim 17, wherein the encoder has a defined run length.

40. (New) The device of claim 17, wherein the encoder comprises a combinational logic table.

41. (New) The device of claim 15, comprising an arbitration module to set the first frequency band.